REMARKS

In the Office action mailed July 5, 2007, claims 1-6 were rejected. Pursuant to this Reply, claim 1-4 have been amended and claims 7-10 have been added. Withdrawal of the rejections and reconsideration and allowance of claims 1-10 are respectfully requested in view of the following remarks.

Rejection Under 35 U.S.C. § 102

Claims 1-6 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Anderson (U.S. 4,832,121). This rejection is respectfully traversed.

Claim 1, as amended, recites a method of determining the inflow profile of an injection wellbore that comprises, among other elements, stopping injection of fluid into a formation, observing temperature of the wellbore at least partially along an uphole section and at least partially along a formation section of the wellbore while the injection of fluid is stopped. Claim 1 further recites injecting fluid into the formation based on observing a temperature peak in the region of the wellbore proximate the uphole side of the formation section, and monitoring movement of the peaked temperature fluid as it moves from the region proximate the uphole side of the formation section and further along the formation section.

Anderson does not teach or disclose all of the limitations recited in claim 1. Anderson discloses a method for monitoring temperature during and after a well treatment. According to Anderson's method, temperature is monitored during injection of fluid into a packed interval to monitor and control fracture growth. During injection, observed temperature peaks move from the largest volume of the fracture and towards the uphole and downhole sides of the fracture, thus indicating the growth of the fracture. *See* Anderson, Fig. 2, profiles 1-5. Once the fracture has reached the desired depth level, the well is shut in and, over time, the temperature peak delineating the fracture interval disappears. Anderson, Fig. 2, profiles 6-9; 6:54-60. Anderson further discloses that when the well is produced and back flow from the fracture interval to the surface occurs, the temperature peak of the fluid moves uphole from the largest volume of the fracture towards the surface. Anderson, Fig. 2, profiles 10-14; 7:3-20.

In contrast to the claimed method, Anderson does not teach or disclose observing a peak in the temperature in the region proximate the uphole side of the formation section while fluid injection is ***stopped*** and then injecting fluid into the formation based on that observation, as required by claim 1. Indeed, Anderson teaches away from taking any action based on observing a peak during shut-in and then later monitoring movement of the observed peak, because Anderson instead discloses that physical and hydrological properties of the fracture may be ascertained by observing the rate at which the peak delineating the fracture interval gradually ***disappears*** during the shut-in stage. Anderson, 6:54-63. Thus, if Anderson were to inject fluid into the formation based on observing the peak (as recited in claim 1), Anderson would not be able to ascertain these properties. Accordingly, Anderson does not teach (or even suggest) injecting fluid into a formation based on observing a temperature peak in a particular region of the wellbore.

Anderson also does not teach or disclose monitoring movement of the peaked temperature fluid as it moves ***from*** the uphole side of the formation section and ***further along*** the formation section during re-injection of fluid, as also required by claim 1. Instead, in Anderson, the peaked temperature fluid moves in the opposite direction (i.e., away from the larger volume of fracture and towards the fracture delineation) as the purpose of Anderson's injection is to grow the fracture rather than to determine the fracture's inflow profile. Accordingly, yet another limitation required by claim 1 is missing from Anderson.

Based on the foregoing, it is respectfully submitted that Anderson does not disclose all the limitations recited in claim 1, and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b) is respectfully requested.

Claims 2-6 are also allowable over Anderson for at least the reason that these claims depend from a claim that is patentably distinguishable over Anderson, and, thus, withdrawal of the § 102 rejection of claims 2-6 is respectfully requested.

The dependent claims also are allowable over Anderson because of the further unique limitations recited in those claims. For instance, with respect to claim 2 and new claim 7, they recite that temperature is observed using a distributed temperature sensing system (claim 2) and using an optical fiber in the distributed temperature sensing system to

sense temperature in the wellbore (claim 7). Anderson's temperature sensing system, in contrast, comprises a string of vertically-spaced discrete sensors. Thus, Anderson's temperature sensing system is neither a distributed temperature sensing system nor does it employ an optical fiber to sense temperature. Accordingly, claims 2 and 7 are distinguishable over Anderson for at least these additional reasons.

New claims 8-10 also are patentable over Anderson. New independent claim 8 recites a system usable with a well that comprises an injection system to inject and stop injection of fluid into a formation that is intersected by a wellbore having a section uphole of the formation and a section within the formation. Claim 8 also recites an observation system to observe temperature at least partially along the uphole section of the wellbore and at least partially along the formation section of the wellbore. The system is configured such that, after injection of fluid is stopped, the injection system re-starts injection of fluid into the formation based on an observed peak in temperature in the region of the wellbore proximate the uphole side of the formation section. Once injection of fluid is re-started, the observation system monitors movement of the peaked temperature fluid as it moves from the region proximate the uphole side of the formation and further along the formation section. Dependent claim 9 recites that the observation system includes a distributed sensor system. Dependent claim 10 recites that the distributed sensor system includes an optical fiber disposed in the wellbore to sense temperature.

For the reasons discussed above, Anderson does not teach an injection system that re-starts injection of fluid based on an observed peak in temperature in a particular region of the wellbore. Anderson also does not teach an observation system that, once injection of fluid is re-started, monitors movement of the peaked temperature fluid as it moves from the wellbore region proximate the uphole side of the formation and further along the formation section. Anderson also does not teach a distributed sensor system or the use of an optical fiber to sense temperature. Accordingly, it is respectfully submitted that new claims 8-10 also are patentable over Anderson.

Conclusion

For the reasons specified above, claims 1-10 are believed to be allowable over the cited references and in condition for allowance. Accordingly, the examiner is respectfully requested to issue a Notice of Allowance. Should the examiner feel that a telephonic interview would speed this application towards issuance, the examiner is requested to call the undersigned attorney at the telephone number provided below.

The Commissioner is authorized to charge any additional fees, including extension of time fees, or credit any overpayment to Deposit Account No. 20-1504 (SHL.0405US).

Respectfully submitted,

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